

REMARKS

Applicants thank the examiner for consideration of an IDS submitted on November 28, 2003. Applicants also acknowledge the Examiner's inquiry regarding co-pending applications. A divisional application which claims priority to the above application was filed on August 5, 2003 and assigned U.S. Serial No. 10/633,557. Applicant also notes that the inventors of the above application filed a later application on February 10, 2000 (after the filing date of the above application) which has issued as U.S. Pat. No. 6,397,926, and a divisional of this later application issued as U.S. 6,735,864. As these patents are filed after the above application, they are not prior art.

I. Introduction

Claims 34 and 35 stand rejected under 35 U.S.C. § 112 ¶2.

Claim 29 stands rejected under 35 U.S.C. § 102.

Claims 1, 4-9, 15, 17, 19-21, 23, 25 and 27-35 stand rejected under 35 U.S.C. § 103.

Claim 26 has not been indicated to be rejected and is presumed to contain allowable subject matter.

Claims 1, 15, 29, 30, 32 and 33 are the independent claims.

II. Amendments

Claim 29 has been amended to more particularly claim that which Applicant regards as their invention.

Claims 34 and 35 have been amended to address concerns raised by the examiner regarding their agreement with their respective base claims. As amended, claims 34 and 35 are believed to be definite within the meaning of 35 U.S.C. § 112 ¶ 2.

No new matter has been added.

III. Prior Art Rejections

A. Claim 29 stands rejected under 35 U.S.C. § 102 as being anticipated by Coe (U.S. Pat. 3, 220,471), Yu (U.S. Pat. 5,353,863) or North et al. (U.S. Pat. 5,748,445).

Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed in a prior art reference as arranged in the claim. See, *C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1349, (Fed. Cir. 1998), *Shearing v. Iolab Corp.*, 975 F.2d 1541, 1544-45 (Fed. Cir. 1992); *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir 1989); *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458 (Fed. Cir. 1984); *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 894 (Fed. Cir. 1984); and *Connell v. Sears, Roebuck & Co.*, 220 USPQ 193, 198 (Fed. Cir. 1983).

Coe does not disclose a heat sink with a column having a heat receiving face and two side faces which are not parallel to said heat receiving face, the column having a cross section whose sectional width decreases as it extends away perpendicular to the heat receiving face, the heat receiving face having a protuberant heat conducting plate section at least one part thereon. Coe also does not disclose a blower coupled to said heat sink for forcing fluid through fluid flow passages defined between the plurality of fins, the blower being disposed so as to face perpendicular to the heat receiving face. Coe discloses heat transfer element 10 which has a column which is parallel to the heat receiving face of flange 13, rather than a protuberant heat receiving face which is perpendicular to the column. Fig. 2, col. 28-36. A protuberant surface is described in Applicants specification at least at page 17, lines 2-7, and illustrated in Figures 6A and 6B. Also, heat receiving face 13 in Coe is disclosed as being parallel to a blower, rather than

perpendicular to a heat receiving face. Figs. 1 and 2, col. 1:15-40, col. 2: 70 through col. 4: 5.

Accordingly, as Coe does not disclose each and every element of amended claim 29 and hence does not anticipate amended claim 29.

Yu does not disclose a heat sink with a column having a heat receiving face and two side faces which are not parallel to the heat receiving face, heat receiving face having a protuberant heat conducting plate section at least one part thereon, or a blower being disposed so as to face perpendicular to the heat receiving face, as recited by claim 29. Yu discloses a heat sink with fins located around a curved surface rather than two side faces which are not parallel to the heat receiving face. Figs. 2 and 3. Yu discloses to use a flat surface for the heat receiving face, rather than a protuberant surface. Figs. 2 and 3. Yu also discloses to place blower 4 at the end of the heat sink to face a direction parallel to the heat receiving face. Figs. 1 and 2. Accordingly, as Yu does not disclose each and every element of amended claim 29 and hence does not anticipate amended claim 29.

North does not disclose a heat sink with a heat receiving face having a protuberant heat conducting plate section at least one part thereon, or a blower being disposed so as to face perpendicular to the heat receiving face, as recited by claim 29. North discloses a heat sink 10 held in a box 54 in which “the three corners 16 of the heat sinks are adapted to attach the heat sink to the circuit enclosure.” Fig. 4, col. 2: 62-68. North discloses to use a flat heat receiving face upon which chip 43 is connected rather than a protuberant heat receiving face. Figs. 1A, 1C, 1D4, 6 and 7. North discloses a fan 42 which blows air through louvers 33 in the top and bottom of the box. North does not disclose to use a blower perpendicular to the heat receiving face. Accordingly, as North does not disclose each and every element of amended claim 29 and hence does not anticipate amended claim 29.

B. Obviousness

1. Claims 1, 5, 6, 9, 15, 17, 19-21, 25, 27, 28 and 30-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yu and Hinshaw (U.S. Pat. 4,879,891).

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *Eocolochem Inc. v. Southern California Edison Co.*, 227 F.3rd 1361, 56 U.S.P.Q.2d (BNA) 1065 (Fed. Cir. 2000); *In re Dembicza*k, 175 F.3d 994, 999, 50 U.S.P.Q.2D (BNA) 1614, 1617 (Fed. Cir. 1999); *In re Jones*, 958 F.2d 347, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992); and *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). See also MPEP 2143.01.

Neither Yu nor Hinshaw discloses or suggests a heat sink with a column having a heat receiving face and two side faces which are not parallel to the heat receiving face, and a heat receiving face having a protuberant heat conducting plate section at least one part thereon, as essentially recited by each of independent claims 1, 15, 30, 32 and 33. Yu does not disclose such features as discussed above. Hinshaw also does not disclose such. Hinshaw clearly does not disclose using a column. Figs. 1-3. Hinshaw also does not disclose a protuberant heat conducting face. Figs. 1-3. Accordingly, neither Yu nor Hinshaw, taken alone or in combination disclose or suggest all of the limitations of independent claims 1, 15, 30, 32 or 33. Hence, the combination of Yu and Hinshaw does not render claims 1, 15, 30, 32 or 33 unpatentable. Further, as dependent claims contain all of the limitations of their respective base claims, the combination of Yu and Hinshaw does not render claims 5-6, 9, 25, 27-28 and 34, which depend

on claim 1, nor claims 17, 19-21, 23 and 35 which depend on claim 15, nor claim 31 which depends on claim 30 unpatentable.

2. Claims 1, 5-7, 9, 15, 17, 19, 23, 28 and 30-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Coe or North in view of Hinshaw.¹

Neither Coe nor Hinshaw, taken alone or in combination, disclose or suggest a heat sink with a column having a cross section whose sectional width decreases as it extends away perpendicular to the heat receiving face, as essentially recited by each of independent claims 1, 15, 30, 32 and 33. Coe does not disclose such features as discussed above. Hinshaw also does not disclose such. Hinshaw clearly does not disclose using a column. Figs. 1-3. Accordingly, neither Coe nor Hinshaw, taken alone or in combination disclose or suggest all of the limitations of independent claims 1, 15, 30, 32 or 33. Hence, the combination of Coe and Hinshaw does not render claims 1, 15, 30, 32 or 33 unpatentable. Further, as dependent claims contain all of the limitations of their respective base claims, the combination of Coe and Hinshaw does not render claims 5-6, 9 and 28, which depend on claim 1, nor claims 17 and 19 which depend on claim 15, nor claim 31 which depends on claim 30 unpatentable.

The suggested combination of North and Hinshaw is addressed below.

3. Claims 1, 4-8, 9, 15, 17, 19, 23, 28 and 30-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over North in view of Hinshaw.

Neither North nor Hinshaw, taken alone or in combination, disclose or suggest a heat sink with a heat receiving face having a protuberant heat conducting plate section at least one part

¹ The Office action appears to present two rejections under a combination of North and Hinshaw. Office action pages 3 and 4. However, the first rejection does not include claims 4, 8 and 23, while the second rejection does. Clarification is respectfully requested.

thereon, as essentially recited by each of independent claims 1, 15, 30, 32 and 33. North does not disclose such features as discussed above. Hinshaw also does not disclose such. Hinshaw does not disclose a protuberant heat conducting face. Figs. 1-3. Accordingly, neither North nor Hinshaw, taken alone or in combination disclose or suggest all of the limitations of independent claims 1, 15, 30, 32 or 33. Hence, the combination of Coe and Hinshaw does not render claims 1, 15, 30, 32 or 33 unpatentable. Further, as dependent claims contain all of the limitations of their respective base claims, the combination of Coe and Hinshaw does not render claims 4-9 and 28, which depend on claim 1, nor claims 17, 19 and 23 which depend on claim 15, nor claim 31 which depends on claim 30 unpatentable.

4. Claims 4, 8 and 23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yu and Hinshaw further in view of Lin (U.S. Pat. 5,740,014) or Coe and Hishaw further in view of Lin.

Claims 4 and 8 depend on claim 1 and incorporate all of the limitations thereof. Claim 23 depends on claim 15 and incorporates all of the limitations thereof. As discussed above, the combination of Yu and Hindshaw does not render claims 1 or 15 unpatentable. As also discussed above, the combination of Coe and Hinshaw does not render claims 1 or 15 unpatentable. Lin does not cure the deficiencies of either the combination of Yu and Hinshaw or the combination of Coe and Hinshaw, i.e., the addition of Lin to either of these combinations does not render either claim 1 or 15 unpatentable. Accordingly, the addition of Lin to either the combination of Yu and Hinshaw or the combination of Coe and Hinshaw does not render dependent claims 4, 8 or 23 as being unpatentable.

IV. Conclusion

Having fully and completely responded to the Office Action, Applicants submit that all of the claims are now in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



Lawrence T. Cullen
Registration No. 44,489

600 13th Street, N.W.
Washington, DC 20005-3096
(202) 756-8000 MEF:LTC:ld/cac
Facsimile: (202) 756-8087
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